sence of the calcareous shells of some of the pelagic species at different depths and in different localities is connected with some of the most important problems in oceanography. It was of the greatest importance that all questions relating to geographical and bathymetrical distributions should be discussed with reference to a thorough understanding of the relations of all existing forms; and it was, indeed, a fortunate thing that a naturalist so familiar with the Foraminifera as Mr. Brady should have undertaken this work.

Mr. Brady, referring to certain views held by Dr. Wm. B. Carpenter and his colleagues concerning the existence or non-existence of true species amongst the lower Protozoa, which are, he admits, "from a purely biological stand-point, for the most part incontestable," holds that they really embody only one aspect of the subject. Although in some families, not merely reputed species, but reputed genera, are connected by a close array of intermediate modifications and dimorphous forms, and all sharp demarcations have ceased to exist, in others the successive modifications appear to be less closely connected, and to possess distinctive characters of greater persistence. "Admitting," he writes, "the intimate relationship which often prevails throughout an entire generic group, admitting even that all the members of a genus may be referred to a common ancestral type, the question still remains how the different terms of each series are to be recognized. The various modifications which have been referred to differ not merely in details of form and structure, but in habit. They are met with under diverse conditions as to latitude, depth of water, nature of sea-bottom, and the like, and their modes of life are often totally distinct; furthermore, fossil specimens, with similar peculiarities, appear to have existed under precisely corresponding circumstances. Whether 'species' or not, the more important of them possess characters which afford means of easy identification, and it is obviously necessary that they should be provided with distinctive names." He admits the value, as a method of study of the plan proposed by Parker and Jones, in their memoirs on North Atlantic Foraminifera, of grouping the almost endless varieties of the Foraminifera around a small number of typical and sub-typical species, but denies that this plan may be made a basis of nomenclature. The binomial system must be retained, and it is impossible to deal with the multiferous varieties in this group without a much freer use of distinctive names than is permissible among animals endowed with more stable characters.

The chapter on the chemical composition of the tests of the Foraminifera possesses considerable interest in connection with the study of bottom deposits. That upon pelagic species would be much more satisfactory to the reader if rather more definite conclusions could have been attained by the author of the memoir in a manner satisfactory to himself.

Eozoon is admitted to a place in the synopsis, but Mr. Brady does not commit himself to any opinions. In the introduction to his bibliography, he states that many of the titles of the less important contributions to the Eozoon controversy are admitted. The American names in the bibliography are those of Isaac Lea, the earliest, 1833, S.G. Morton, J. W. Bailey, E. de Verneuil, J. Hall, Meek and Hayden, G. G. Shumard, W. M. Gabb, J. W. Dawson, Count Pourtales, J. P. Whiteaves, C. A. White, H. A. Johnson and B. W. Thomas, T. A. Conrad, Angelo Heilprin, and J. Leidy.

The publication of the results of the Challenger is evidently being forwarded as rapidly as the limitations of painstaking research will permit. It is much to be regretted that the French zoölogists who have the work of the Talisman and Travailleur in charge do not profit more by this example.

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## *DROUGHT AND WEATHERCOCKS.*

A WRITER in *Symons's meteorological journal* calls attention to a connection between drought and weathercocks. The connection does not always exist. Some weathercocks are entirely independent of drought or floods, and some are very seriously affected. The former are those which do not carry any of the usual letters N, E, S, W, or which are wholly of metal, and carried on metal or stone supports. The weathercocks which suffer from drought are those which have the cardinal points indicated by the letters, and which (though themselves of metal) are carried at the summit of a tall pole. The pole, under the influence of sun and drought, splits, and the cracks run nearly along its length, but not precisely. They are slightly inclined, and all run parallel. If the drought is prolonged, they become numerous, and, though no one crack may be a tenth of an inch, the aggregate amount becomes large. We have ourselves measured one on which the letters were, during the July drought, carried round 44°; the S letter was carried around until it pointed almost exactly S.W. With subsequent moisture the cracks have partly closed, and possibly by November the letter S will be nearly back in its true position; but as to this we have no knowledge. It is evidently necessary for observers to watch for the occurrence of this somewhat strange error.